

ABSTRACT

The present invention provides methods, devices, and systems for analyzing defects in an object such as a semiconductor wafer. In one embodiment, it provides a method of characterizing defects in semiconductor wafers during fabrication in a semiconductor fabrication facility. This method comprises the following actions. The semiconductor wafers are inspected to locate defects. Locations corresponding to the located defects are then stored in a defect file. A dual charged-particle beam system is automatically navigated to the vicinity defect location using information from the defect file. The defect is automatically identified and a charged particle beam image of the defect is then obtained. The charged particle beam image is then analyzed to characterize the defect. A recipe is then determined for further analysis of the defect. The recipe is then automatically executed to cut a portion of the defect using a charged particle beam. The position of the cut is based upon the analysis of the charged particle beam image. Ultimately, a surface exposed by the charged particle beam cut is imaged to obtain additional information about the defect.